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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/985,780	11/06/2001	Akira Yamamoto	122.1474	4517

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WASHINGTON, DC 20005

EXAMINER

TRAN, HENRY N

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 02/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/985,780

Applicant(s)

YAMAMOTO ET AL.

Examiner

HENRY N TRAN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4,7-9,12-16,19-21 and 24-26 is/are allowed.
- 6) ☒ Claim(s) 5,10,17 and 22 is/are rejected.
- 7) ☒ Claim(s) 6,11,18,23 and 27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

This Office action is in response to the applicants' amendment received 12/5/03 (Paper No. 4). The amendments to the specification and the claims have been entered. Claims 1-27 remain pending in this application. Applicants' remarks were considered, with the results set forth as following.

#### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "an original clock frequency" and "an execute signal" defined in the independent claims 5, 10, 17 and 22, and the "a front subframe" and "a rear subframe" defined in the independent claims 9 and 21 must be shown or the features canceled from the claims. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Specification***

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

The claimed terms: "an original clock frequency" and "an execute signal" defined in claims 5, 10, 17 and 22, "a front subframe" and "a rear subframe" defined in claims 9 and 21,

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have no clear supports or antecedent basis in the specification. Applicants are required to amend the specification for the above-identified terms appearing in the claims. This is necessary in order to insure certainty in construing the claims in the light of the specification.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 5-6, 9, 10-11, 17-18, 21-23 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 9, 21 and 27 recite the limitations “a front subframe” and “a rear subframe” in lines 5-6 of claim 9, line 6 of claim 21. There are insufficient antecedent basis for these limitations in the claims.

6. Claims 5-6, 10-11, 17-18 and 22-23 recite the limitations “an original clock frequency” and “an execute signal” in line 9 of claim 5, lines 5-6 of claim 10, lines 9-10 of claim 17, and lines 6-7 of claim 17. There are insufficient antecedent basis for these limitations in the claims.

For the purpose of this Office action, the examiner assumes that the specification is amendment for providing supports for the claimed limitations noted above. Applicant is required to amend the specification in response to this Office action.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5, 10, 17 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (U.S. Patent No. 6,552,701) in view of Moon (U.S. Patent No. 6,466,187).

Tanaka teaches an apparatus and methods for driving a display, in which is frame comprises  $n$  subfields, each subfield has an address period (a scan period) and a light period (a sustaining discharge period), see figure 1, and a gradation scale is represented by combining the subfield to be lit among the subfields; wherein 2 subfields of brightness  $B = 64$  are arranged at an interval of about half a length of said frame, see figures 3-6; wherein, the brightness of each subfield is determined by the number of lit pulses (sustaining pulses), a total number of lit pulses in a frame is varied in accordance with the gradation scale, and the timing generator 32 generates various clock signals according to the order of the subfields, see figure 2, col. 6, line 47 to col. 7, line 6. However, Tanaka does not teach that when a total number of lit pulses in a frame is varied, an original clock frequency, which generates an execute signal, is varied. Moon teaches an apparatus and methods for driving a display, comprising a controller 32 for receiving original vertical and horizontal synchronizing clock frequency signals H and V, wherein a field detector 34, a variable frequency 36, a variable duty ratio 38, and a compensator 42 are utilized for varying the clock frequency signals based on a frequency of the sustain pulse of a subfield detected by the field detector, see figure 9, col. 4, line 54 to col. 5, line 25. It would have been

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obvious to one of ordinary skill in the art at the time the invention was made to varying the original clock frequency as taught by Moon in the Tanaka device because this would provide an improved display system capable of displaying high quality image such that the brightness difference among frames of images does not exist, see Moon, col. 4, lines 6-7. By this rationale, claims 5, 10, 17 and 22 are rejected.

***Allowable Subject Matter***

9. Claims 1-4, 7-9, 12-16, 19-21 and 24-26 are allowed.
10. Claims 6, 11, 18, 23 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

11. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure. They are U.S. Patent Nos. 6088012, 6448960, 6323880 and 6433763, which teach systems for gradation scale or halftone driving controlling using subfields arrangements.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENRY N. TRAN whose telephone number is 703-308-8410.

The examiner can normally be reached on Mon – Fri from 8:00AM – 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHARD A. HJERPE, can be reached at 703-305-4709.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

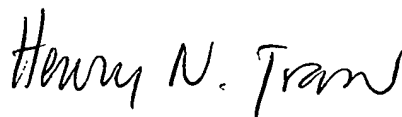
Washington, D.C. 20231

**or fax to:**

703-872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703-306-0377.



HENRY N. TRAN  
Examiner  
Art Unit 2674

Hnt  
February 18, 2004